THE AMERICAN ARCHITECT AND BUILDING NEWS.

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BOSTON, JUNE 10, 1876.

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A CASE of professional practice has just come before the Chicago Chapter of the Institute. Mr. Cochrane, one of the members of the Chapter, had been employed by the county to design the County Hospital, and, after having furnished the necessary drawings and tracings for the work, was requested by two of the contractors in the work to supply them each a set of the general drawings in addition. This he did, charging them each two hundred dollars for the drawings, a price which he thinks brought him no profit. In a report of the grand jury, this charge was referred to as a matter of reproach against Mr. Cochrane, who then laid the question before the Chapter, and requested their opinion whether the charge was an honorable one, and also whether there should be a limit to the amount of work which could be required from an architect. The questions were referred to a special committee, Messrs. Cleveland, Bauer, and Wight. The committee, reporting on the subject, quote the fourth article of the Constitution of the Institute, which, after saying that the condition of membership shall be the honorable practice of the profession, adds that "no member shall accept direct or indirect compensation for services rendered in the practice of his profession, other than the fees received from his client." They say that in this case Mr. Cochrane's client was the County Board, and that the mechanics to whom he furnished the drawings were only contractors; and they consider Mr. Cochrane's acceptance of money from them an indiscretion. With regard to professional usage in such a case, the committee call attention to the fact that the former custom of architects in charging contractors for working-drawings furnished them has been out of date for at least fifteen years (we doubt if it has prevailed at the East within a much longer period), and that it is the custom among architects at this day, to furnish all the drawings that are needed, and even extra ones, without added compensation; they holding that to receive money from a contractor is likely to create suspicion and wishing to carefully preserve their independence. The question, whether a limit is to be set to the work required from architects, they defer to the Chapter for future consideration. The committee exonerate the transaction of any dishonorable character, in view of the entirely open and business-like manner in which the thing was done.

THE decision of the committee is unquestionably judicious, as is the suggestion by which it was accompanied, that the unimpeachable course would have been for the contractors to have themselves employed draughtsmen to make copies or tracings of the drawings at their expense, with the permission of the architect. The question involved, of the limit of the work which may be expected of an architect, is one which is likely to become more and more important as his duties are becoming more complex, and exact more labor from him. There is no doubt that architects in this country spend on the average much more time and money in drawings for work of the same cost than they did years ago. The differences among architects in this respect are very great; but it is safe to say, that, for those who do their work with real care, the expense of carrying it on eats up from one-half to three-quarters of their commissions; probably the latter with most of those who have enough work to need any considerable force of subordinates. This is a matter which is quite inscrutable to clients, who seldom detect the difference between the architect whose office-work is done with minute and expensive faithfulness, and the one who throws it off hastily and cheaply. It is left out of the account by most people, who think that a five per cent commission must pay architects very liberally and even extravagantly. So it does many architects; but there are many others to whom with a considerable practice it barely gives a comfortable living. The trained eye sees the corresponding difference in their work at a glance; but the public does not. In this condition of things, it is quite desirable that somewhat more definite standards should be fixed for the amount of work which an architect should give. We are not of those who are anxious for an accurate computation of all labors of an architect, and a closely adjusted scale of payment for every thing. We think that the freedom of a professional relation is a wholesomer condition for him than the minute exactions of a mercantile tariff. But it would be an advantage if there were some better understanding than exists of the proper amount of his labor; one which should protect him, on the one hand, from the exactions of clients who often expect his commission to cover an unreasonable amount of work of which they do not at all understand the cost; and which, on the other, should secure to the client something more than the hasty and inadequate workmanship which is often rendered in return for his five per cent.

THE Castellani collection at the Centennial has not yet, or had not at our last information, been fairly thrown open to the public. It is archæologically more interesting and more valuable than any other part of the exhibition, and of more importance than almost any collection of works of art, except the Montpensier pictures, ever brought to this country. It consists of antique sculpture in marble and bronze, of gems and jewelry, including the famous Etruscan goldsmith's work which the collector's brother has with so much pains trained his workmen in Rome to imitate, and of a large quantity of Italian majolica and Moorish pottery. The collection was for some time on exhibition in the British Museum, where it attracted much attention, — so much so that a strong effort was made to induce the British Government to appropriate the necessary amount (forty thousand pounds) for its purchase, rather than let it be taken to the United States, whence it was thought that Americans would not allow it to be brought back unsold. Mr. C. C. Perkins, in a letter to the Nation, has entered a plea for the purchase of the collection in this country; suggesting that, if it be not found possible to raise the necessary sum in any one city, it may be divided among three or four, and exhibited as a whole in each in turn. We earnestly hope that it may be found practicable to keep it here; and, considering how much more valuable such a collection is for purposes of study as a whole than in parts, we trust it may be possible to keep it together.

UNFORTUNATELY though Americans have, and deserve, the reputation of spending money lavishly on works of art for their private collections, they have shown very little of the collective liberality which is necessary to the generous support of public museums of art, or to the purchase of collections which are too costly for a single private purse. When

an American finds himself in a position like that of Mr. Lick or Mr. Cornell, to label, and identify wholly with himself, a large and conspicuous institution, he is sometimes tempted to do it; but our very wealthy men commonly do things on the one-man principle, and they have not yet turned their attention much to the things which aspirants for the cultivation of the community desire of them. We can think at the moment of but two existing institutions in the country where the Castellani collection would be much in place. One is the new Art Museum in Boston; and the other, the freshly organized Industrial School in Philadelphia, to which the State and City have combined to present the Centennial Art Building after the Exhibition is over, and which has written its name with discrimination as purchaser on many charming objects in the Japanese and other art-exhibits.

AT the recent annual meeting of the Royal Institute of British Architects, Mr. Charles Barry was appointed president for the next term of three years; Sir Gilbert Scott retiring, after a term of more active service than might have been expected from an architect so much absorbed in the higher and more studious walks of his profession. The Institute has been reproached of late, with want of activity and interest among its members; and it is hoped that the active energy of the new president may infuse new spirit into its working.

The Council of the Institute, in their report, allude to the threatened destruction of Wren's churches in London, and propose that the Institute, represented by Mr. Beresford Hope, should plead with the Government for their preservation. The destruction not long ago of the tower of St. Antholin, which we have mentioned in our columns, and the removal since then of another of Wren's works in the city, have made the admirers of his architecture anxious lest gradually all his churches, of which there are several noted ones left in the city, should be voted intruders, and be pulled away. The Architect, commenting on the report, says, "It is not so very long ago, that the Council of the Royal Institute of Architects would have met the case by sending a professional deputation straight to the Prime Minister."

Certain requirements of "Rural and Urban Sanitary Authorities," whoever they may be, that elevations as well as plans of new buildings shall be placed on record, seem to have alarmed the architects lest they should be exposed to piracy of their designs from having them put in a public collection. The Architect fears that the Council are proposing to memorialize the Home Secretary on the subject, but suggests that it would be much better to adopt the habit of sending elevations so sketched "as to render piracy a joke." The authorities, it thinks, would not be likely to know the difference; and for their own purposes there is probably no need that they should. Indeed, it is difficult to see that elevations have any "sanitary" interest at all, unless they be too high, which is a matter of figures.

CENTENNIAL ARCHITECTURE. — II.

LIKE the Memorial Hall or Art Building, the Horticultural Hall is intended to be a permanent building, and is therefore more elaborate and of greater pretensions than its neighbors. It has a basement of brick and stone, and a superstructure of iron incased in wood; is one hundred and sixty by three hundred and fifty feet, covering therefore fifty-six thousand square feet of ground. It is well arranged for its purpose; its main feature being the great floral hall, so called, eighty by two hundred and thirty feet. This is carried on piers and arches like the nave of a church, and runs up into a high clerestory surmounted by a long lantern which seems an unnecessary feature, though it certainly improves the exterior outline. Round the whole hall runs a narrow aisle; and outside this on the long sides are forcing-houses, their roofs running down to the ground in a curve, and interrupted by projecting porches and the ranges of rooms which make, as it were, a long transverse aisle across each end of the building. It is quasi-Moresque in style; — the catalogue says, "in the Moorish style of architecture of the twelfth century," but with an odd tinge of Renaissance and of modern German in the detail, with occasionally a Gothic touch. If it was necessary to impose a style upon such a building, the one chosen was not a bad one; but the architect cannot be congratulated upon the success with which it is carried out. The Moresque adapts itself very well to structures of a half-temporary or half-out-of-door kind, and, on the whole, suits better with the slightness of iron construction than any of the classified and recognized styles; how well, may be seen by examining Mr. Hunt's clever use of it in an iron building on Broadway, which must be familiar to many of our readers.

The outward aspect of the Horticultural Hall is rather imposing, with a sort of festive richness that suits its purpose, and a vigorous disposition of masses, somewhat squat in the lower story, and looking a little foundationless from the unsubstantial air of the roofs of the forcing-houses which cover the most of the lower part. But the detail lacks the spirit and refinement which add charm to the richness of Moresque work; and the exterior disappoints the visitor, who on approaching the showy mass sees splendors of Oriental art replaced by the cheap vagaries of the jig-saw. The color is peculiarly unhappy. Pure color is avoided for the most part, and yet the effect is singularly crude and staring. The interior is more agreeable. There is very good moulded and colored brick-work in the horse-shoe arcade and the queerly modern piers that support it; but the mixture of black, red, and buff, is rather overdone and spotty in detail, and monotonous in repetition. There is a pretty and effective iron balcony, which tells better than any thing else in the general effect of the interior. The iron-work of the roof, which ought to add greatly to the *ensemble*, is so coarse and clumsy in detail as to detract from it: a curious result is got by submerging the rafters and straining-beams in the roof, while the rest of the truss-work is given great prominence, and the bosses and intersections are heavy to lumpishness. The proportions of the hall are pleasant, nevertheless. It looks spacious and stately. As one looks down its whole length, the effect of color at the distant end is agreeable; the arcade and balcony tell well against the deep red wall behind. But the general coloring is hardly better than outside; it is still coarse and glaring. Saracenic architecture certainly tends to bright colors; but if there is any place where artificial coloring, whether rich or not, should be rigorously subdued into harmony and quiet, it is where it forms a background or *encadrement* for the superbly toned splendors of natural flowers. The coloring of such an interior is an exceedingly difficult undertaking, to be attempted with great caution. The decorators seem to have had no idea of its difficulties or its requirements. Fortunately whatever is a mere matter of paint may be amended in due time.

We have examined the Memorial and Horticultural Halls with some minuteness, because they are permanent buildings, costly, and, in respect to size, of the first class. Spite of the pressure under which undoubtedly all the centennial work was done, there was no excuse for not designing these two with the greatest care, and making them as good as they could be made. The other buildings can be more summarily discussed. In general treatment we may assume that such buildings, being naturally temporary and slight, should be so ostensibly. They should be natural and straightforward in design, altogether without tricks or shams, or any addition of architectural features for the sake of appearance. It

ought not to be expected that a great deal of time should be given to elaborating the designs in detail. If they suit their purpose well, and if their proportions and masses are well studied, they do well. It is reasonable that their detail should be so simplified and repeated that what there is of it may be outlined with care, and made spirited and refined. The first of these conditions is more generally met than the last. The buildings are almost all well arranged and constructed for their uses; the general shape is apt to be satisfactory; the detail is seldom marked by elegance or simplicity. Of coloring we are sorry to say there is hardly a really successful example in the grounds: yet coloring is the one thing which may fairly be as well done in a temporary as in a permanent building.

The Government Building is of good form and proportion, large and dignified, the central mass hardly adequate for the rest, but the whole decidedly pleasant in outline. It is not wooden in treatment, though built of wood, as are all the rest of the public buildings, and is somewhat French in detail. The color is hot and uncomfortable. The Woman's Pavilion, near by, is not noticeable in any way except as a successful example of covering a large area, of broken outline, with very little interruption by the supports, and a straightforward simple construction. Of the Agricultural Hall there is not much to be said but that it is hopelessly ugly. It is a huge, broad, low mass, out of which rise high aisles, whose section is a pointed arch springing from the ground, and which cross in the middle. There is a certain grandeur in the inside effect of these lofty aisles supported by arched beams, without ties or any thing to intercept the view down the whole length; the use of the arched trusses is ingenious and perfectly legitimate, and the exterior the exact counterpart of the interior. But the proportion of the arches is disagreeable, the turrets with ogee roofs which are added to bear them company on the outside are trumpery; and the whole thing looks mean, as pointed architecture in wood invariably does. To crown all, the huge roofs are painted a bright crude green, and loom up from afar in offensive contrast to the rich masses of dense foliage against which they are displayed.

The smaller buildings scattered over the grounds vary greatly in style and merit. The most interesting of them are the Japanese dwelling-house and bazaar, the Swedish schoolhouse, and the houses of the British commission. The Japanese houses are not yet complete, apparently, and the public is kept jealously away from them. Their broad low roof, covered with gray tiling, and their light verandas, are exceedingly picturesque; of their construction an article in an earlier number of our paper (No. 4, Jan. 22) will give a sufficient idea.

The Swedish schoolhouse might almost serve for a model of wooden construction, but is not one very likely to be followed in a land of steam-mills, boards, and clapboards. It is a one-story building, broad and low, very nicely proportioned, with low-pitched and boldly overhanging roof. The construction is substantially like that we are familiar with in Swiss cottages in Switzerland. The walls are solidly built of logs or beams about five by eight inches, we should guess, set on edge as it were, and halved together at the angles, the ends projecting through, making a genuine log-house. These projecting ends are thrown out near the top of the wall in a broad sweep, making a bold and solid projecting bracket to carry the overhanging eaves, after the Swiss manner. The partitions are built in the same way; the ends of the beams, protruding through the wall, make the internal divisions, and form additional roof brackets. But the timbers of the wall, instead of being squared as in Swiss work, are planed flat on the beds to give a close joint, and wrought to a convex curve on the faces; which gives the wall a horizontal reeding, not disagreeable to the eye, and suggestive of solidity. There are no thicker beams relieving themselves against the walls, and carved into belts or string-courses, as in the Swiss houses. The openings, too, are quite unlike the Swiss, being arched and shafted, and decorated with saw-tooth ornament, like twelfth-century Norman work, and so less suited to a wooden house; but they are somewhat harmonized with the surrounding construction by being set or grouped into square panels, and treated as a filling. The wood-work is wrought with great nicety, and varnished or shellacked so as to preserve the natural color of the pine outside as well as inside. Altogether the beauty of the outline and disposition, the naturalness and firmness of the construction, and the simple grace of the detail, make this little structure one of the most charming things in the Exhibition.

The half-timbered houses of the British commission, in the style of two hundred years ago, have been so illustrated in the Building News and other papers that they must be familiar to our readers. The interior is pleasantly fitted up with staircases, mantles, and furniture of dark oak, wainscoting, and rich sober-hued paper-hangings. A singular effect is produced by painting the wainscoting a dark dull chocolate-brown, with ebonized beading, which is rather gloomy in itself, but combines well with the wall-papers of the style now in vogue in England, with brown, blue-green, and neutral grounds, relieved by dull red and gold. The ceilings in the lower story are papered in white, buff, and gold. The whole effect is quite rich and at the same time sober, not to say sad-colored.

Of the many State buildings, perhaps the most attractive is the Connecticut, a plainly designed cottage of timber and plaster, very good in form and detail, its interior hall sheathed in wood of an unlucky dirty brown stain, and with a pretty bracketed gallery on two sides. The Massachusetts building is not very happy in proportion, and is gloomily dark in color; but its generally quiet character, and the vigorous simplicity of its detail without and within, make it attractive. The best point in the exterior is the combination of a broad, very low-pitched gable, with a flat piazza on each end, which is excellent. The furnishing, it must be said, is deplorable.

The New Jersey building, though perhaps a trifle overdone, is very picturesque, and is the general favorite among the smaller buildings. The tiles which cover it, made in Camden, we believe, are altogether a new manufacture, and one which we trust will be encouraged. For many parts of our country, and for many uses, they are likely to be very serviceable, and their color, though a little raw in their present newness, would be a most welcome addition to our architecture. The Ohio building has a well-designed first story of stone and an upper story of wood; the whole good in effect, though unnecessarily piebald in the painting. The stone was furnished by various stone-cutters from their several quarries, and, allowing for a little spottiness, is handsome. The roof is covered with a checkerboard of tin, laid diagonally, and stamped in a relief pattern. Where a tin roof is to be used, an invention which obscures the wrinkling that changes of temperature induce in it should be welcome; but we cannot consider the stamped pattern any improvement.

Of the rest of the houses of the different States, the less said the better, for the most part. There are here and there pretty kiosks and other structures of small pretension, but we have not time to particularize them. Perhaps the most offensive building in the grounds is the sheet-metal pavilion, a small French-roofed house of galvanized iron, loaded with coarse ornament of the most pretentious kind. Galvanized iron is a very valuable material for its uses, and its uses are many: there is no need of pressing it into the place of other materials where they will serve better. Any one who wishes to see what structures can be made of sheet-metal may look at a little French kiosk of brass and copper in the eastern end of the Machinery Hall.

THE ILLUSTRATIONS.

COUNTRY-HOUSE AT NEWARK, N.J. MR. H. F. JELLIFF, ARCHITECT.

THIS view illustrates the proposed alteration of a residence near Newark, N.J. It shows the road front, the principal rooms facing Newark Bay. The building is to be of brick, with tile roof.

HOUSE FOR H. B. INGRAHAM, ESQ., GREENWICH, R.I. MR. J. P. PUTNAM, ARCHITECT.

This house is to be built of stone, quarried on the spot. The perspective drawing shows the principal front, overlooking Narragansett Bay. The sashes of the conservatory are so arranged, that

they may be removed in summer, in order to form a large open veranda, as shown. The interior is to be finished with hard wood. The hall and dining-room have open timber ceilings. The staircase hall occupies the whole of the tower, showing the roof-timbers,

and lighted both through this roof, and by a frieze of stained-glass windows over the piazza on the entrance front, shown on the plan of first story.

IRON FRONT ON BROADWAY, NEW YORK. MR. R. M. HUNT, ARCHITECT.

FIREPLACES FOR THE HOUSE OF MR. W. H. WARREN, BOSTON, MASS. MR. S. J. BROWN, ARCHITECT.

THE BEARINGS OF THE PROPERTIES AND FUNCTIONS OF BUILDING-MATERIALS AND OF MOISTURE IN THE GROUND ON DAMPNESS IN OLD AND NEW DWELLINGS. — III.

READ BEFORE THE NINTH ANNUAL CONVENTION A.I.A., BY ADOLF CLUSS, FELLOW.

OCCUPIED dwelling-rooms should have porous and dry walls so as to absorb in part any humidities formed, and to aid in the ventilation.

A grown person vitiates about two thousand cubic feet of air per hour; and these would be replenished in winter simply by about two hundred square feet of ordinary brick-wall exposed to the open air. This imperceptible change of air shows the vital difference between ventilation as an element of life and health, and perceptible one-sided currents called draughts.

The action of porous walls has exceptions. Their functions are replaced in hospitals by a non-absorbing plastering of cement, in connection with a well-regulated mechanical or forced ventilation as recommended by a large majority of experts in this specialty; and this system should be applied to factories, where operations in which much moisture is developed are carried on. With cellar and basement walls, the hygroscopic building-material absorbs moisture from the soil, since it is deprived of the opportunity of imbibing it from the air. The means of evaporating such moisture being cut off, mouldy walls are formed, wall-paper will not adhere, and the plastering crumbles off. This will also occur with thin or badly constructed walls exposed above ground to the prevailing rains, east and north, during protracted storms. From this diagnosis we may deduce some golden rules for building healthy dwellings, and also for dispelling dampness from buildings where it has appeared after occupation.

If, in bad ground, you are compelled to go below the highest level of ground water, and to construct safe foundations impenetrable to it, the rules governing hydraulic architecture come into play, which are a complete study in themselves, and lead too far to treat on this occasion. With the intelligent use of cement, according to the requirement of each case, the construction of absolutely, water-proof cellars is no matter of doubt at all: they can be built as well as water-tight basins for bathing or for fishes, casks, cooling-vessels in breweries, and so on; but no oversight at all is admissible. Use cement in building foundations; plaster the outside where it touches any banks of earth with cement before they are filled in; but leave the inside of such walls unfinished as long as possible, so that as much of the moisture in the walls may evaporate as the warmest temperature they may be hereafter exposed to will require: otherwise the capillary moisture still retained in the masonry will evaporate, will force an outlet, and will crumble off the plastering. Use isolating courses of slate or similar material at the level of the basement and cellar floors, as a precaution against the rising of dampness from underneath; and use them again at the level of the top of any banks of earth resting against the masonry, so as to insure additional safety for the stories above. Be liberal with the use of cement or concrete underneath any floors laid directly on the ground; and establish communications between the exterior atmosphere and the inner cellar air at its lowest level, by means of small flues built in the walls. Use hollow walls, and place the air-space as near as possible to the inner face of the wall, since, the thinner this inner facing is, the more readily it will accommodate itself to the change of temperature in only occasionally heated rooms, and the formation of condensed water on their surfaces will be counteracted in closed rooms. Cut stone should be worked while it is green, and then laid aside before use to become dry under the influence of the atmosphere. The artificial stones should be treated according to their hygroscopic qualities: in summer or dry weather, especially they should be wetted before use. Lumber, flooring, and finish stock should be stacked up before use, so as to give the prevailing winds access to their whole worked surface. When signs of mould appear in a house, remedy it at once; but, before cementing old basement-walls, let the masonry be first dried by exposure to the sun outside, and by flames of alcohol or coal-pans inside.

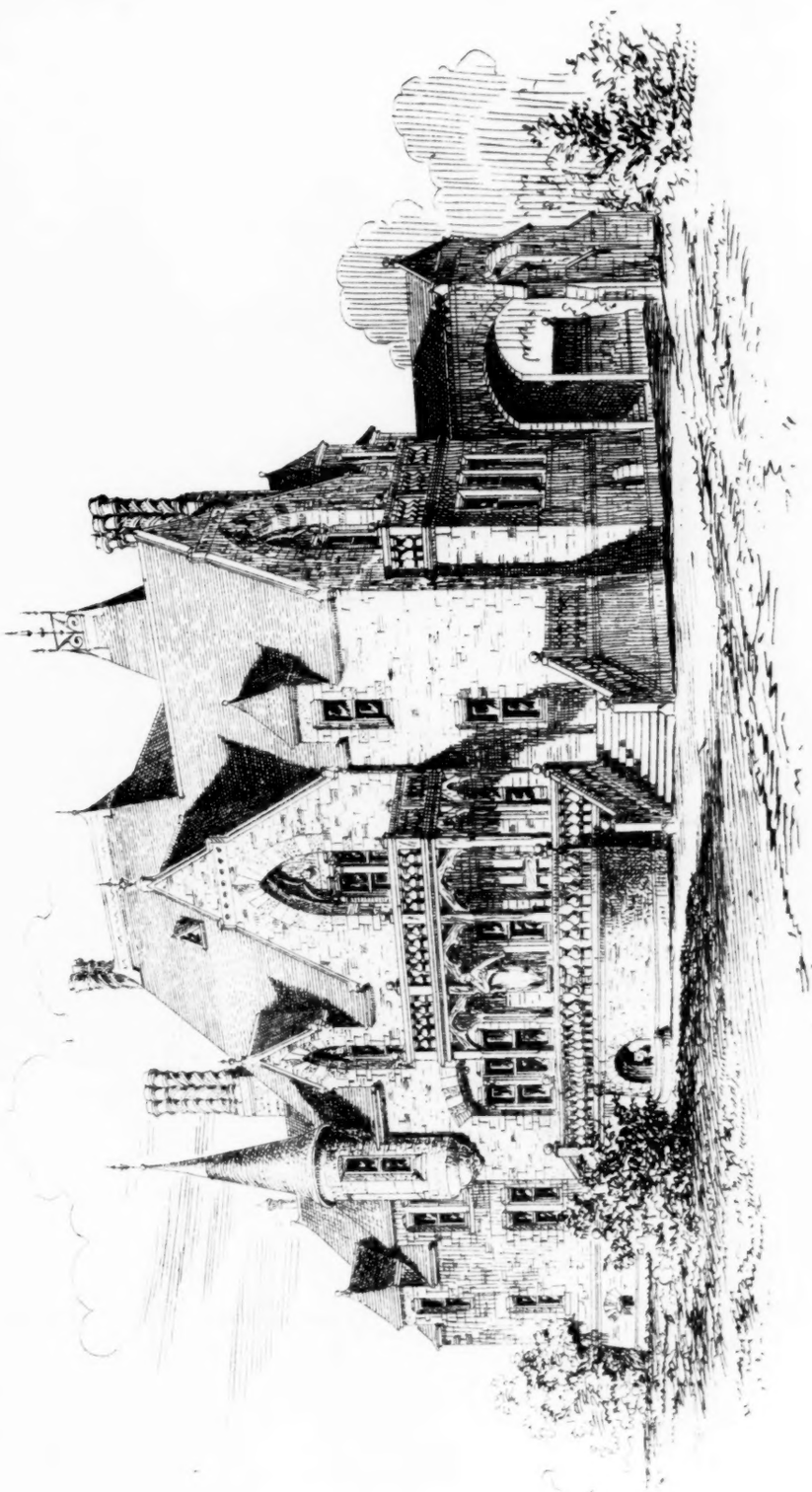
For mouldy walls, air-spaces and cement intelligently used are permanent remedies, while coal-tar and similar means, being soluble in water, are more temporary expedients.

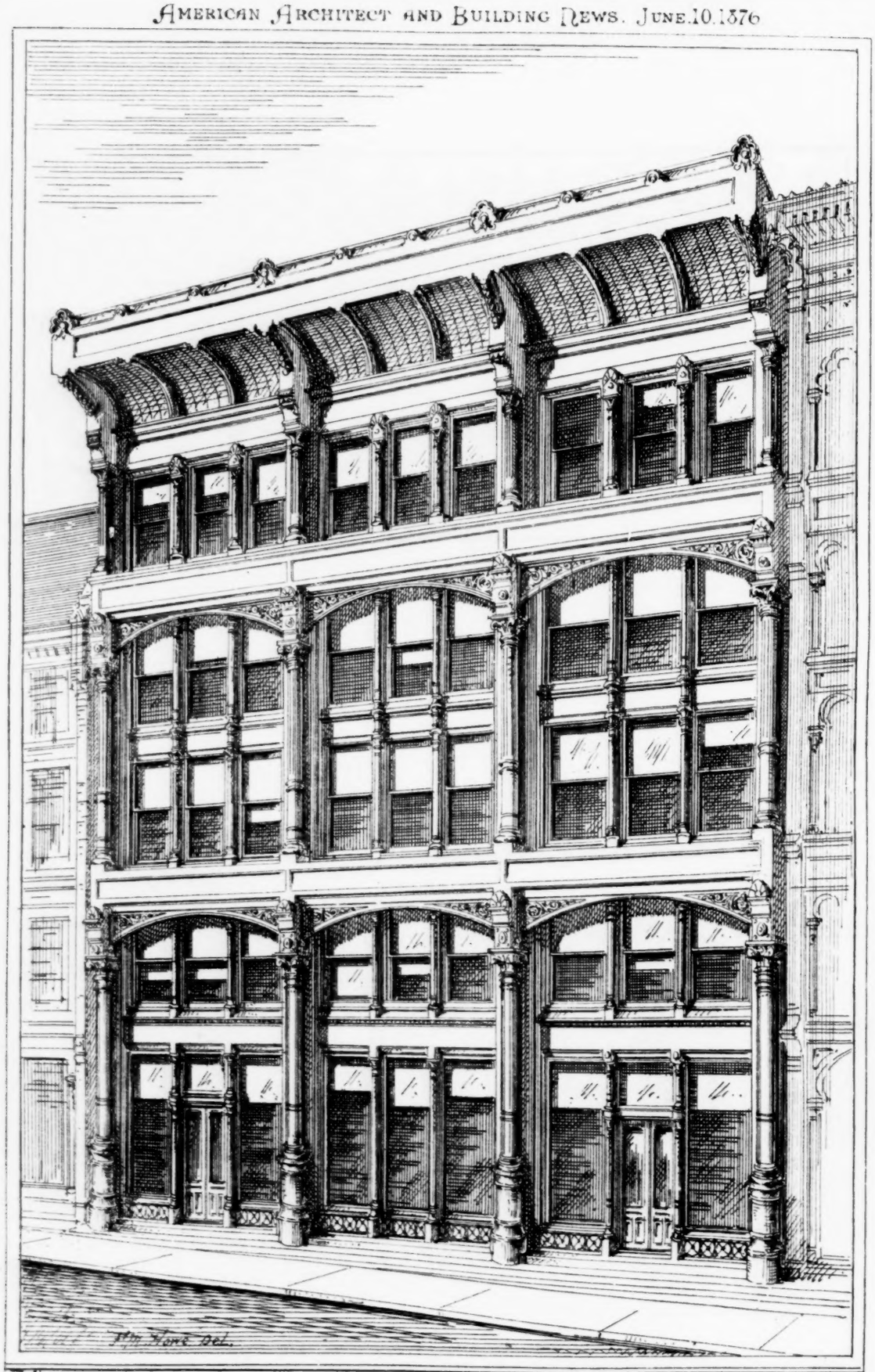
Underneath any dwelling, the ground should be concreted even if it is not used at all; since cases of sickness and death have occurred because this expedient was neglected, arising from the porosity of the ground. After the occurrence of leaks in the gas-mains in winter, currents of escaped gas have been observed to move towards the

COUNTRY HOUSE.
H. F. JELLIFF ARCHITECT.
GROUND PLAN

HOUSE FOR H. B. INGRAHAM, ESQ.

H. H. Richardson, Architect.





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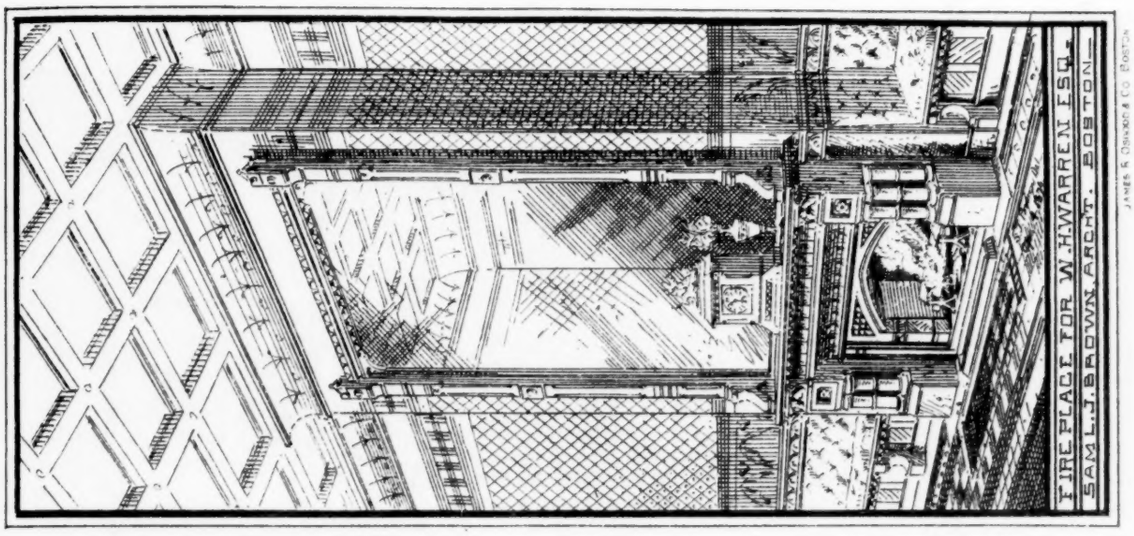
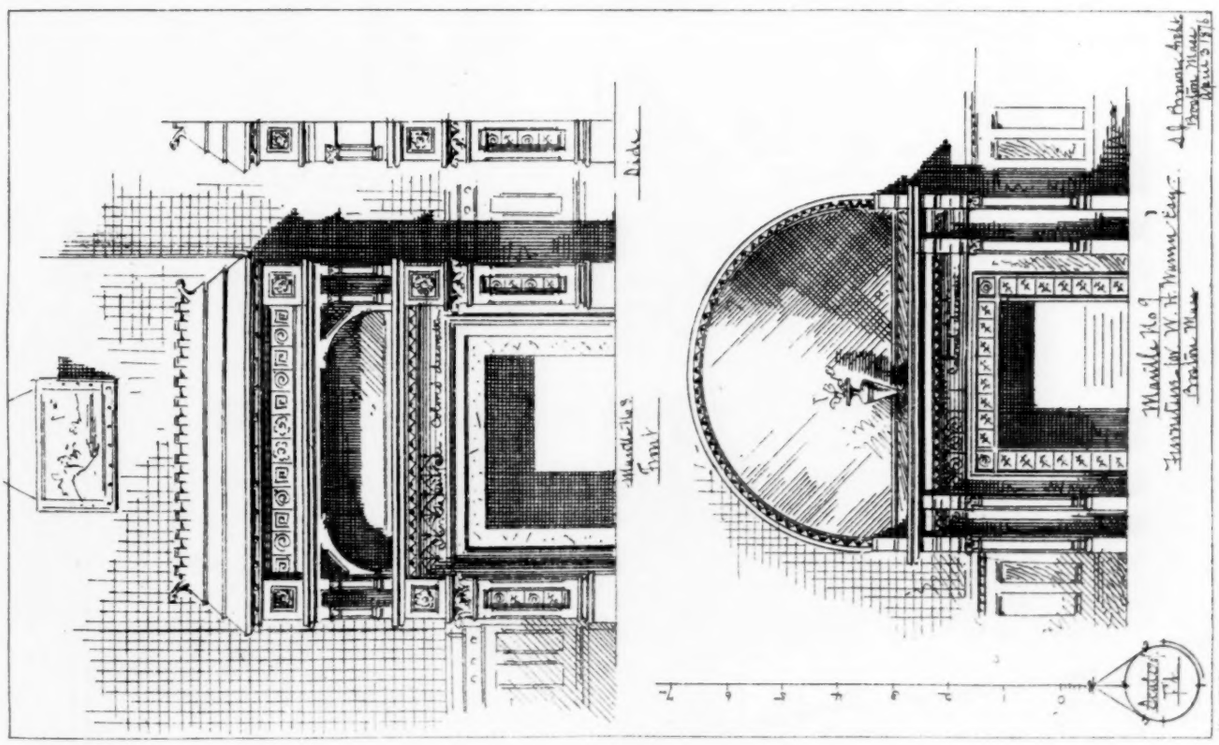

FIRE PLACE FOR W. H. WARREN ESQ.
SAM'L J. BROWN, ARCHT. BOSTON.



nearest or best heated building, though entirely disconnected from the gas-pipes. This was caused by and traced to the pressure of the colder column of the outside atmosphere upon the surface of the street; since it must be considered, that what we call ground is in fact a mixture of earth, water, and air, so much so that water and air occupy, in apparently dense-grown gravel and sand soil, about thirty-three per centum of the whole volume of the ground. Even frozen ground is permeable for such light, gaseous bodies as air; and the liability to contracting disease and death while sleeping at night is apparent. Ingenuity has been taxed in vain, in hundreds of cases, to dispel an indefinite, dreaded smell in the lower rooms of houses, which was simply that insidious, invisible agent, ground-air, which had been drawn to a strongly heated room, entering unsuspected, though in its wake the gases from a neighboring leaky privy-vault were being introduced.

With this, the outlines of the physiology of the walls of our dwellings are closed, with the hopes of having elicited some noteworthy features from an apparently dry subject, and to have proved that rational methods of building have as much to do with health and comfort as climate and place.

ARCHITECTURE AT THE ROYAL ACADEMY. — II.

LONDON.

IN Mr. Brooks's churches, — "St. Chad's, Haggerstone," "Chapel of St. Mary at the Cross," and the "Church of the Ascension," Wandsworth, — as well as in his "Schools of St. Michael, with Convent and Hospital," we have Gothic of quite a different type, earlier and more severe in style, and with a strong Continental feeling running all through it. Indeed, Mr. Brooks is about the only church-architect whose designs show such a leaning to early French, so strong has the reaction set in in favor of English work. It is bold and strong in treatment, depending for its effect on its proportions, breadth, and simplicity of detail. The first two of the above works show interiors of side chapels, similar in general treatment, though different in detail: the vaulting in both cases is particularly simple and good, while in the latter, the peculiar treatment of the internal tracery of the windows, forming in each case a bit of an arcade, is effective and picturesque. The stalls are also noticeable as being very well designed. These chapels are called "morning chapels," and are used for early morning service, one of the outcomes of ritualism. In the Church of the Ascension, the most noticeable feature is the junction of the tower and spire, which has circular angle turrets, more peculiar than satisfactory. In the Conventual Buildings of St. Mary at the Cross, Mr. Brooks has succeeded in investing them with a very conventual appearance; though, what a "convent" has to do with the Church of England, must be a puzzle to most people. As architecture, however, they are very good, having just that half-monastic, half-domestic feeling, which seems to fit them for their purpose.

In No. 1,001, we have a beautiful bit of "Wentworth Church," Yorkshire, which Mr. I. L. Pearson, A.R.A., is building for the Earl Fitzwilliam. The earl is to be congratulated on becoming possessed of such a noble church, if the portion shown here is to be taken as a specimen. It is a view of the interior, looking across the nave into the south transept, and looks quite like an old early pointed church, purity in style and treatment stamped on its every line, fully bearing out what I said lately as to the strength Mr. Pearson has conferred on the associateship of the Academy. This is the work of a true artist, shown in a thoroughly artistic drawing, which tells at once that its author is an accomplished architect; it is a noble design, in every sense of the word, such as Mr. Pearson is sure to produce. He is to be congratulated also on his return to pure English Gothic, from which he wandered away during the early French mania to do St. Peter's, Vauxhall, but to which he has returned in other notable instances besides this of Wentworth Church.

No. 1,008 shows us the interior of "The Chapel of the Hospital for Sick Children" in Great Ormond St., by Mr. E. M. Barry, R.A., a gorgeously decorated chapel, illustrated by a splendidly colored drawing by Mr. A. H. Haig. It is to be feared Mr. Haig's work is the best of it; as, when his rich tints are looked through, we find but very middling architecture beneath. It has an apsidal end, and a semi-Byzantine tone throughout, with some really coarse detail of no character to speak of. If it is proposed to spend all the money this design means, it surely would be used to much better purpose in making the little sick children more comfortable in their wards, than in coloring up what is after all but poor architecture.

It is not often it falls to the lot of a modern architect to design a cathedral of the first class in regard to size and importance; but Mr. R. H. Carpenter has been fortunate in having been commissioned to execute such a church for Manchester, and here sends us a drawing of the west front. This is a stately, scholarly design, in the middle pointed style of English Gothic, founded on the best types, and with a slightly French feeling in the arrangement of the three west doorways. The centre is flanked by two west towers, somewhat after the manner of York, though quite different in design. The general effect is simple and grand, and yet with sufficient richness to lift it into the rank of great cathedrals. The most striking feature in the design is the octagonal lantern at the crossing of the transepts. It reminds one of Ely, but is larger and more fully developed in every way: a noble feature nobly carried out. The drawing is very well executed, and shows all the detail to have been very carefully studied, and its parts well thought out.

We have some work for the Roman Catholic Church also, — Messrs. Pugin's "Church of the English Martyrs," Tower Hill, and Mr. Tasker's "Interior of St. Margaret's Church," Barking Road. The former shown in a half exterior, half interior perspective, gives a church of the Pugin type of Gothic, clever, but thin and weak at times. An effort to give the galleries importance as a structural element, with stone piers and arches, which afterward support the clerestory, is not very successful. Mr. Tasker's work is quiet and good. Some proposed painted decoration on the walls is shown in red on the drawing. He also sends a drawing of "Monastery at Highgate," which is in somewhat heavy Italian, of monastic character. It would certainly be better in Italy in every way, as it is out of place in London, and looks like any thing but English, or in keeping with the surroundings of Highgate.

Mr. Sedding sends a view of his "Church of St. Clement," Bournesworth; a good, sensible design, with a very fine west tower. "Wadhurst Park Private Chapel," by E. I. Tarver, is a most depressing design, crushed out of all proportion by a very heavy chancel arch in red brick.

The Nonconformists make but a poor show: they don't seem to be favored with many clever architects. The best of the two or three churches shown is probably the Congregational church, school, and minister's house, at Pontypridd, South Wales, by Mr. I. Sulman, which is good, quiet work. Its chief merit is displayed in the distinction of purpose which each building shows in the group, so that one can tell at once which is school, which is church, and which is minister's house. The drawing is also good and well colored. The above comprise the principal designs for church-work; and we reserve the domestic and other buildings for a future notice.

NEW YORK.

NEW YORK is to have an aquarium, the plans for which have been prepared by A. B. Ogden. If the enterprise meets with popular support, it is not unlikely that some New York architect may be called upon to design a structure of this class, worthy of the opportunity. The present building is to be put up as a private speculation by Mr. W. C. Coup, for many years chief business manager for P. T. Barnum. A plat a hundred by two hundred feet, recently occupied by the demolished Colosseum, has been secured; and men are now busy putting in the foundations. The building will be one story in height, of brick, with large sash lights at the sides; and one immense skylight will form the roof. The tanks will be placed at a distance of three feet from the side walls, giving room for a passage, to accommodate pipes, and also facilitate the passage of attendants. Light for the tanks will come from above, the spectator looking through a plate-glass front. The sides of the tank are to be composed of slabs of slate, while rock-work will slant up at the rear. There will be a storage reservoir of a hundred thousand gallons, where a supply of salt water will be kept. This water will be conveyed from the river in barrels, and kept from stagnation by aëration, for which purpose air-pumps worked by engines will be provided. The middle of the floor will be occupied by large tanks, built partly above and partly below the surface of the ground. These great tanks will be reserved for the white whale, sharks, and other large fish. Small tanks will be placed at convenient points; and when in running order the establishment will be able to accommodate all classes of fresh and salt water fish. Architecturally the present aquarium is not of much merit, nor has much endeavor been made to have it so; but, in view of the fact that it is the first public aquarium in this country, its successful hold on public opinion may lead to the erection of similar buildings in other cities.

Mr. Griffith Thomas has just completed an iron building on Broadway, and is now engaged upon a new apartment hotel at

the corner of Forty-second Street and Fifth Avenue. Its front on the avenue is to be seventy-five feet, and its depth a hundred and twenty-five feet. On one portion of the plat, covering about half its area, is the mansion now occupied by William H. Webb. This fine town-house is a four-story structure of Dorchester stone, erected some years since by Mr. Thomas as a residence for himself. It will be worked into the design, being raised to a height of seven stories, but otherwise outwardly unchanged. Exteriorly the whole is a Renaissance design worked out entirely in Dorchester stone. The height to the main cornice is about one hundred feet; and the façade is made the more prominent by several large bays running from the ground to the fourth floor; one of these bays on the avenue front, two on the Forty-second Street flank, while at the angle a large one butts out to the extreme limit of the building line. These bays are richly finished with angle columns and and carved ornaments. The cost of this change will be about $200,000.

Mr. Engelbert has on hand a small schoolhouse for St. Alphonse Roman Catholic Church, to cost some $20,000. A. B. Ogden, the architect of the aquarium above referred to, has recently completed a large apartment hotel. George Inslee and John G. Prague are each engaged on flat houses at the upper part of the city, made possible and profitable by the advance of the elevated railroad to that out-of-the-way portion of the metropolis. At 739 and 741 Broadway will shortly rise a great business warehouse with a face of fifty feet, and a depth of two hundred feet; the lofts, being open to their full extent, and with skylights and other openings, will make a great fire-trap. It was precisely such well-disposed piles of timber that the fire of last February found ready for a great conflagration. The building belongs to the estate of P. and J. Goelet, and will cost $55,000.

John S. Snook has the building of the United States Life Insurance Building, corner Warrenton Street and Broadway, on hand. It is now an iron building only four stories high; and, because of the fact that it stands opposite the open City Hall Park, it has a very squat look. The main cornice of cast iron will be taken off, and two stories built in, and the cornice then replaced. The whole work, to be finished by Oct. 1, will cost $60,000.

Mr. Duckworth is doing a similar service to the Tradesman's Bank Building, corner of Reade Street and Broadway. Here a marble building has the cornice removed, two entire new stories built upon the present building, and the cornice replaced. In many of the older buildings at the lower part of the city, this process of extension skyward is found very profitable, especially as steam or hydraulic elevators make access to the seventh-story offices in every respect as ready as to the second-story ones. The older structures have generally the thickness and strength of wall to support these additions; but in some of the new iron erections it would almost appear that the addition of a single tile to their towering height would bring them down.

REPORT OF MEETING, A. I. A.

BOARD OF TRUSTEES.

AT the regular meeting held May 18, 1876, it was resolved, that the question of the status within the Institute, of parties whose relations to the Institute appear to involve anomalous conditions as regards the Chapters in their localities or otherwise, . . . be referred to the next convention. A letter from the Secretary of the Baltimore Chapter was read, including a resolution of the said Chapter recommending that the Board of Trustees have all papers read at the Annual Conventions published, and distributed to the members of the Institute. It was voted to refer this subject to the next convention.

As it had been recommended by the last convention, that the next convention be held at Philadelphia during the progress of the Centennial Exhibition, it was voted that the Tenth Annual Convention of the American Institute of Architects be held in Philadelphia, and open the eleventh day of October, 1876. The Secretary read a letter from Mr. Van Brunt in relation to the non-receipt of documents belonging to the Foreign Secretaryship: he was directed to communicate with the Philadelphia Chapter on the subject in case of the continued non-arrival of the documents. The Secretary was directed to furnish parties making application for them with lists of the names of members of the Institute, for business purposes.

The Board of Trustees acknowledged with thanks the invitation extended to the Institute by the American Society of Civil Engineers, to take part in the approaching convention of that Society; also an invitation to make use of the rooms and appliances of the said society at Philadelphia during the Centennial Convention. A communication from the Pennsylvania Museum of Art, asking for gifts or for liberty of purchasing objects of art industry exhibited by the Institute at the Centennial Exhibition, was also read and commented on. A communication addressed to members of the Institute from the Cooper Union, enclosing platform and other tickets for the approaching commencement of the Union, was read, and a vote of thanks for the same was passed.

"THE OFFICE."

THERE are usually three distinct epochs in the office-life of a young architect. Pupil, assistant, architect; apprentice, journeyman, master, — it matters little what we call them, — each has its peculiar work, its own pleasures, its own troubles. As to the office, it is still essentially the office, — the long desk, the high stool, the bare floor, the walls innocent of all forms of art, or at the best hung with feeble perspectives of feeble designs, or rubbings of well-known brasses. Here and there, so few as to be hardly worthy of being quoted as exceptions, are to be seen rooms more like artists' studios, where, in the midst of elevations and specifications, we may meet with a fragment or two of glorious color, a cast of some Greek statue or bas-relief, some good examples of Eastern pottery, and perchance an easel. These few exceptions you had perhaps better know nothing about; for whatever you may think, however much you may desire to cultivate yourself by cultivating your eye to the habitual reception of the beautiful; however strong may be your conviction that in joining our profession you became a student of that *one* art which includes within itself all the principles of beauty, — shining strength in form of Parthenon nestling loveliness among town-halls and minsters, — you may be quite sure that the intelligent people of England will not regard you as an artist, and that, in any question of artistic work which may perhaps arise in the conduct of your work, you are as likely as not to find that those who are kind enough to trust you with the great and responsible work of welding stone, brick, timber, and metal, into mighty compositions, will not ask your advice as to the finishing of the walls, the hangings, or the furniture, but will prefer to consult even the amateur painter in water-colors. *The world will not allow an architect to be an artist.* You must learn to understand this at the very outset. An architect, in the world's eyes, is a man of business on the same platform as a surveyor or land-agent. Some of us seem to have an ambition for a diploma, so as to make us nearer the level of the lawyer and the doctor. Indeed, the private office of many an architect is very suggestive of that of a conveyancing attorney. The table in the centre of the room is crowded with letters, reports, specifications, quantities, accounts, &c., tied up with red tape. There are the ponderous volumes of the Messrs. Kelly; there are tin boxes with large white letters painted on them, telling us that they are honored by having been made the receptacles for papers relating to the estates of Lord This and Sir Somebody That. On the walls are two or three large colored views of noblemen's country-seats; and there is a general untidy, crowded look about the place, as much as to say, "It is impossible to keep things in order when one has so much to do." The rich man expects a servant in his architect to obey his behests, and not a teacher to direct him. Remembering this, the pupil may derive much profit from observing the action, voice, manners, of his master, when in the presence of rich clients. You should be careful, too, how you reply to visitors. I know a distinguished man who once called on an architect, and who was received by the pupils not merely with bad manners, but with absolute rudeness. Pupils, especially those in country towns, are extremely apt to be curt and brusque in answering inquiries from strange visitors. Hawkers of pens and publishers' touts are no doubt a great nuisance, and take advantage of the slightest laxity on your part; but you may be civil and yet firm to all, and not jump over embryo premises to unjust conclusions. The manners and conversation of architects' pupils are often not merely ungentlemanly, but eminently priggish. Even very mild young gentlemen, in the first flush of their new case of instruments, with the consciousness of being brought up to something which is somehow not exactly like a retail shop, are prone to indulge in trumpery airs and paltry juvenile smartnesses. One trick pupils have is, not to turn round when addressed by a caller; another vulgarity is, in replying, to repeat the whole or part of the question asked. For example, a gentleman called at an architect's office not long ago, and this was the scene: —

A clerk's office. At the desk, with their backs to the door, three young gentlemen, looking at French prints.

STRANGER (*Enters after knocking twice*). — Is Mr. So-and-So in?

ELDEST YOUNG GENTLEMAN (*without turning to interlocutor*). — Yes, Mr. So-and-So is in.

STRANGER. — Can I see him?

ELDEST Y. G. (*in same position, curtly*). — No, you cannot see him.

Exit STRANGER.

And Mr. So-and-So, who was talking to a builder, lost an introduction to an influential but modest man.

You may have a large quantity of writing to do in your first office. Do not let the quantity encourage carelessness on your part as to the quality. An illegible or almost illegible hand is not a *sure* sign of genius, and may some day involve much trouble to you and others. In all your office-work, whether writing or drawing, mixing colors, or tying up papers, learn to be cleanly and even precise. Nothing is got by slovenly habits. You may fancy that, because among a certain class of artists the studio is kept in the direst confusion and litter, litter and mess are somehow signs of art; but they are nothing of the kind: they are only signs of the lazy, the idle, and the ill-bred.

The second office-experience, or that of the assistant, is ofttimes what the first ought to be, — the real probationary time of the student. The youth who has had an early ambition artwards, and whose master has been selected by parents or guardians for any and every reason except that which should have governed the selection, is not infrequently the victim of a grievous disappointment when, "his time" having expired, he seeks his first situation or engagement. Of course it is disheartening to them to be told that instead of their being paid they will have to pay; that we whose designs they admire are really not paid by the Department of Science and Art to rectify the errors and make good the shortcomings of young Pecksniffians. So, then, any one of my readers who has the misfortune to be in the Pecksniff groove, and is growing uncomfortably conscious of the fact, had better at once make up his mind either to induce the home authority to pay a second premium for him as soon as possible to some one who has something to teach and can teach it, or else to rely solely on himself and the public means of instruction.

When an assistant, however, is capable, and is successful in getting a salaried engagement, his one rule of the office should be, to make his master's interests his own. The majority of architects are very dependent on clever young men. The active man of business, who is hand in hand with successful company promoters, who is an authority on school-boards, who talks profoundly at tea-meetings, or takes the chair at missionary gatherings, is not, as a rule, partial to the drawing-board. His individual practice consists chiefly in valuations, arbitrations, dilapidations, rights of light, and other semi-legal functions. To such an one the young assistant who knows how to get up an effective set of drawings, who can design fairly well, and has a faculty for etching perspectives without playing the fool on them by the introduction, however much disguised, of irrelevant matter, may prove extremely useful. Only, in preparing for this happy consummation, the assistant should be particularly careful not to hurt the professional pride of his master. In cases where the latter is wholly innocent of design and drawing, having not so much to do with the work as the client, — where the assistant has been in effect the sole architect, — your master has not only a right to sign the drawings, and speak and write of the design as his own, but will be grievously annoyed if you venture, even among your friends, to claim it, or any part of it, as yours. Much of modern sculpture is managed on the same wise principle; and you will find it in various callings, — dentistry, law, and others, — whenever the business is of an extensive nature. For remember that every thing is purchasable nowadays, and an architect has "a right" to the authorship of every thing done by the assistants in his office. So, if you are wise, you will encourage other branches of art, and thus, in dull times, be enabled perhaps to add new lustre to your master's name, by writing a book or painting a picture. The gentleman who is gratified in putting his name to your designs for churches and town-halls would be even more pleased to scribble it in the corner of one of your pictures. — *The Architect.*

HOSPITALS. — Mr. Erichsen says that "there is one remarkable circumstance connected with the age of hospitals, viz., that new buildings added to old ones become more unhealthy than the original buildings."

THE EFFECT OF VIBRATION AND CONCUSSION ON ARTIFICIAL STONES.

NEW YORK.

TO THE EDITOR OF AMERICAN ARCHITECT AND BUILDING NEWS.

Dear Sir, — The notes on the effects of vibration and concussion on artificial stone, which appeared in your issue of May 20, lead us to believe that the artificial stone in question was of the most inferior description; either from the fact that the Portland cement used in manufacturing the stone was of bad quality, or that the manipulation of the ingredients, cement, sand, shellac, in mixing or moulding, was not properly done.

We have noticed in Prospect Park, Brooklyn, N.Y., a bridge for a carriage-road, built of "Béton-Coignet," in use for the past four or five years, and which shows no signs of deterioration caused by vibration or other causes. Entire fronts, lintels, ashlar, &c., of "Béton-Coignet," both in New York and Brooklyn, have been examined carefully, and found not to have suffered by vibration or other causes mentioned in the notes. Arch blocks of lime of Teil for filling between beams have sustained, in experiments, the load of two thousand pounds per superficial foot in spans of four to six feet; and the vibration of the beams, where these blocks have been used under my supervision, has in no manner affected their solidity. Pavements of Vicat, Lafarge, and English Portland cements, have been subjected to very severe trials, and have proved to be able to resist concussion, &c. At the Lenox Library in this city, the rear passage is laid in Vicat artificial stone six inches thick, over arches between iron beams, and has withstood the travel of over four hundred cart-loads of coal or ashes; the marks of the wheels being scarcely perceptible even where the arrises of the stone were exposed. In front of the Tribune Building, the sidewalk is laid with the same materials, over iron beams extending ten feet under the street; and, notwithstanding the constant vibration caused by passing vehicles during its manufacture *in situ*, the stones are in a perfect state.

Even the roughest class of concrete walls will not be affected by vibration caused by the passage of trains on a railway. We have seen a building at Monroe, in Orange County, within a hundred feet of the railway, which has basement and two stories of walls of cribwork, or concrete, topped by a mansard roof. The walls are 20 feet high, 20 inches thick in basement, 16 inches in first story, and 12 inches in second story, and of a clear height of 17 feet. After three years the walls were perfect in every way.

The above instances have convinced us that "Béton-Coignet," artificial stone of Vicat or Lafarge cements, or Teil lime and even of common lime when properly manufactured, are not affected by vibration or concussion more than brick or our common building-stones.

MAURICE FORNACHON.

NOTES AND CLIPPINGS.

THE STONE CHAPEL. — Of the public buildings standing in Boston a hundred years ago, but four remain; and in order of age these are, Christ Church, the Old South, the Old State House, and the Stone Chapel. The first and last named remain essentially unchanged. Christ Church lost its steeple in the gale of 1804, and it was rebuilt in 1807. Stone Chapel remains just as it was a century ago, without and within. In 1689 the Queen's Chapel, the first Episcopal church in New England, was erected on the site of the present Stone Chapel, on the corner of School and Tremont Streets. It was named Queen's Chapel, in honor of Queen Anne; then King's Chapel, for her successor; and on the termination of the Colonial Government the present edifice took the name of Stone Chapel, although the preceding name was, and is still, sometimes used. The original chapel, a small wooden structure, remained till 1710, when it was enlarged to nearly double its original size. In 1749 the corner-stone of the present Stone Chapel was laid by Gov. Shirley. In 1756 a new organ was purchased, built by Adam Smith of London. In 1839 the rector, alluding to this organ, said, "The tradition that it was selected by Handel himself should be accepted as founded in truth. Handel died in 1758; and, although blind eight years before, his ears most probably judged of its tones and powers, and his own hands have rested on the keys." This organ was in use from 1756 to 1869. The only centennial clocks remaining in Boston are in Christ Church and the Stone Chapel. The Stone Chapel clock was presented by Ebenezer Oliver, Esq. It is said to be a hundred years old, and curiously constructed. The only existing bells that were rung in Boston a hundred years ago are the Christ Church chime, cast in England in 1744, and the Stone Chapel bell, placed in the tower some 125 years ago. It is a fine old English bell, and was afterwards cracked, but was repaired. The same accident again happening, it was recast by the Revere Company in 1816, the original metal only being used.

THE BALTIMORE CATHEDRAL. — The Catholic cathedral in the old Catholic city of Baltimore has just been paid for and consecrated, seventy years after its corner-stone was laid, and fifty-six after its completion and dedication.

THE DUTCH CHURCH. — The Dutch Church is the richest in New York City, next to Trinity. It retains its old name (Collegiate Reformed Dutch Church), while the denomination has dropped that national term, and is known as "The Reformed." This is done in order to retain legal hold of their immense estates. This church owns the land on which stands the new building of the Evening Post, which is about 46 x 100 feet. The ground rent paid by the proprietors of that journal is $30,000 a year. The following fact shows the value of land in this favored spot: In order to obtain the complete corner of Broadway and Fulton Street, it was necessary to buy the corner strip, 6 x 100 feet. For this strip the church paid $100,000, being $16,666 per running foot facing Broadway.

IS CEMENT A CORROSIVE? — The recent gas-explosion in the Capitol at Washington led to the discovery that the iron pipes embedded in cement were mere cylinders of rust, so completely were they honeycombed by the corrosive effects of the cement.

HOSPITAL MORTALITY. — In their report on the scheme of a village of cottage hospitals, the committee say, apropos of the present hospital buildings, "The inhabitants of New York City who have been ill enough to need medical treatment at their bedsides, when patients in the New York Hospital died at the rate of ten out of the hundred: when treated outside the hospital at their poor dwellings, they died at the rate of four per cent. In other words, the mortality of those sick persons who were admitted into a hospital was two and a half times greater than among those who were prescribed for by dispensary physicians at dwellings."

MORE SPACE PROVIDED. — The Court of General Sessions, feeling the necessity of elbow-room in which the recorders can dispose more quickly of the increasing criminal cases now swelling their calendars, have made arrangements to appropriate all the space in the old brown building formerly used as Marine Courts. At No. 27 Chambers Street, on the third floor, rooms formerly occupied by lawyers are now being turned into a Marine Court room; and another branch will be opened in the old City Hall, thus keeping the present number of four Marine Courts, one of which will be permanently kept open as chambers.

"THE PRODIGAL SON." — The burning of the Melodeon Hall at Cincinnati involved the loss of M. Dubufe's famous painting of the Prodigal Son. It was valued at $75,000, and was insured for only one-third of that sum. M. Dubufe, who is still alive, was the pupil of M. Paul Delaroche.

THE HOUSES OF PARLIAMENT. — The so-called new Houses of Parliament (they were begun in 1840) are wretchedly arranged as regards drainage. They are situated on the bank of the Thames, on a site which, originally a swamp, the architect did little to improve. The basement is below the level of tide-water. The main sewer runs longitudinally under the whole building, so that all the drains are within the main walls of the building. As a remedy for this radical error in construction, the sewer-gas is drawn off into a large chimney, and there burned.

INSECURE FOUNDATIONS. — Chance alone prevented a serious accident from occurring recently at the docks at Hartlepool, Eng. Water in the English docks is always maintained at a level, the gates being opened only at flood tide for the ingress and egress of vessels. This obviates, among other things, the necessity of keeping a watch over the springs and hawsers with which a vessel is tied up to the wharf, so that they may be slacked off as the tide falls. If, however, the water should flow out of the dock at low tide because of a leak or other cause, the most serious loss would result, as a vessel might be supported for a while by her fastenings until the water had fallen sufficiently to bring a strain upon them great enough to cause their rupture, when the vessel would fall with such violence as to wreck it seriously. A disaster of this kind was caused at Hartlepool by a vessel getting stuck in the gateway so that she could get neither in nor out, and consequently the gates could not be closed in order to keep the water from running out with the tide. Seventeen vessels in the dock grounded, with more or less damage to themselves and their cargoes. The panic was increased by the knowledge that two large and heavily loaded warehouses depended upon the resistance of the water in the dock for the security of their foundations. Contrary to all expectation, these did not give way, and the next high tide permitted the removal of the vessel. The damage will not exceed a few thousand dollars.

GLAZED ROOFS. — Mr. Rendle's patent system of glazing, mentioned in No. 10, was recently subjected to the following severe test: A skylight twelve feet square was inserted in the roof of the car-shed at the Royal Arsenal at Woolwich, no intermediate supports being employed. A heavy column of water was poured upon it from a fire-hose for a long time, without causing the slightest perceptible leakage.

CONCRETE FLOORS. — At a recent meeting of the Institute of British Architects, Major Seddon described the tests to which he had subjected a slab of concrete six inches thick, fourteen feet and a half long, and six feet nine inches broad. Across this slab he marched forty-five soldiers, causing them to go at the double-quick, out of step, and also to jump upon it. Then it was subjected to a dead load gradually increasing up to fifteen tons, when it began to bend; when the load was increased to thirty-two and a half tons, it sank three-quarters of an inch; it did not yield further when the load had been increased to forty-two tons.

BUCHAREST. — Our readers will find in the *Revue de l'Architecture* for May the full programme of a competition for a Legislative Building at Bucharest in Roumania. Three prizes of $1,200, $800, and $400 are offered. The sum appropriated for the building is about $180,000. The drawings must be delivered at the chancellor's office at Bucharest by the 1st of September, 1876.

SCAFFOLDING. — The scaffolding which has been erected for the rebuilding of the *Hotel de Ville* at Paris is larger than any that has ever been erected in that city. It forms a quadrangle 497 feet by 427 feet, and provides 547 yards of scaffold platform. Its height is about 90 feet, while the square towers at the angles rise 120 feet. Besides these angle-towers, there are eight other towers for hoisting material. Those who have never seen a scaffold for an important building in France can have no conception of the care with which this portion of the architect's work is designed; for in France the architect is obliged to design the scaffolds, centres, &c., to be used in the erection of his building, and is held personally responsible for them; hence accidents caused by the use of improper scaffolds are more rare than with us, where they are left in the hands of the carpenters and builders who use them.

TREE-PLANTING ABROAD. — Ever since the year 1854, the Prussian Office of Woods and Forests has been engaged with the replanting of certain districts in the Rhenish Provinces. These districts, which are all more or less mountainous, were formerly covered with a heavy growth of timber trees, which during the present century have been entirely cut down. It is thought to be this absence of trees, that has caused the numerous disastrous inundations during the past few years. The denuded territory measures about seven hundred acres, half of which has been replanted with Scotch pine, at an outlay of six hundred dollars per acre.

GLASS. — The Chinese are the masters of a process, which, so far as we know, is not known nor practised by any other people. They understand the art of covering plates of sheet lead with thin layers of colored glass. With these sheets the domes and sides of their temples are covered, giving to them a singularly lustrous and gorgeous appearance. Specimens of this glass-covered lead are in the hands of French glass manufacturers, who hope to discover the secret of the process.

PIPES. — Pipes capable of resisting a pressure of twenty atmospheres have been made in France, from endless paper saturated with coal-tar. They are said to be almost indestructible, strong, and tight: moreover they are poor conductors of heat, and are cheap. In 1841 an attempt was made to introduce the use of glass pipes of about seven inches diameter. It was urged that these pipes could be produced at about one-third the cost of cast-iron pipes, were practically imperishable, and would sustain a pressure of one hundred atmospheres. Of course their fragility rendered the attempt unsuccessful; but if M. de la Bastie succeeds in perfecting his "toughened glass," or M. Piefer's "vulcanized" glass turns out to be a practical invention, there seems to be no reason why, in certain positions, glass pipes might not be used to great advantage. If they ever are used, it will put an end to the reign of "practical" plumbers. Any householder can himself discover where the pipe has become stopped, and can call in an artisan who will not have to cut a pipe half a dozen times before he can locate the stoppage. There will be no more danger of solder getting inside the pipe when a joint is made; but if cement, or whatever is used for making a joint, does get inside the pipe, it can be at once detected by inspection.

PRESENCE OF MIND. — Not long ago, while two workmen were engaged in fixing a lightning-rod upon a steeple at Ville-sur-Ourthe, Belgium, it became necessary that one of them should stand on the other's shoulders in order to solder a fastening. While so engaged he spilled some of the molten metal, part of which fell upon the hand and fore-arm of his fellow-workman, inflicting intense pain. The sufferer, knowing that any sudden motion on his part would precipitate his companion to the pavement below, had the courage and presence of mind to bear the pain without flinching, and by so doing prevented a terrible accident.

THE VATICAN. — The Vatican is a collection of buildings, on one of the seven hills of Rome, which covers a space of 1,200 feet in length, and 1,000 feet in breadth. It is built on the spot once occupied by the gardens of Nero. It owes its origin to the Bishop of Rome, who, in the early part of the sixth century, erected his residence on this site. About the year 1160, Pope Eugenius rebuilt it on a magnificent scale. In 1305, Clement V., at the instigation of the king of France, removed the Papal See from Rome to Avignon, after which the Vatican remained in a condition of obscurity and neglect for more than seventy years. But soon after the return of the Pontifical Court to Rome, which took place in 1376, the Vatican was put into a state of repair, again enlarged, and was thenceforward considered as the regular palace and residence of the popes, who, one after the other, added fresh buildings to it, and gradually filled it with antiquities, statues, pictures, and books, until it became the richest depository in the world. The library of the Vatican was commenced 1,400 years ago. It contains 40,000 manuscripts, among which are some by Pliny, St. Charles Borromeo, and many Hebrew, Syrian, Arabian, and Armenian Bibles. The buildings composing the Vatican are crowded with statues found beneath the ruins of ancient Rome, with paintings by the masters, and with curious medals and antiquities of almost every description. More than 70,000 statues from the ruined temples and palaces of Rome have been exhumed, and placed in its galleries.

BRAZIL. — Brazil has sent nine hundred specimens of her woods to the Centennial.

BRICKS. — An exchange says that bricks are now regularly imported into this country from Japan.